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ABSTRACT

Student research projects fail as a reading development technique if students have not mastered the skills necessary to complete the project or if the project's purpose is not clearly defined. When presented effectively, however, these projects provide a highly motivating and meaningful context for using reading skills. Viewed as a method of developing information skills, project work falls into six distinct stages: (1) defining subject and purpose, (2) locating information, (3) selecting information, (4) organizing information, (5) evaluating information, and (6) communicating results. Students doing project work must follow four steps: determining goals or aims, making plans to achieve these goals, carrying out the plans, evaluating the success of the project, and using this evaluation to review plans and goals for next time. Project work is more effective if schools, as well as teachers, develop a policy for using student projects within the curriculum. (MM)

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David Wray

# Improving Reading Through Project Work

In recent years evidence has begun to accumulate that the opportunities which project or topic work presents for the development of reading skills are rarely exploited to the full. What commonly seems to happen is that project work comes to consist of the accumulation of large amounts of haphazard information, often copied directly from reference books. This can often result in very presentable end-products, but when questioned, the children may have little or no idea of what they have learnt in the process. This article will attempt to determine some of the reasons for this state of affairs and then will go on to suggest some ways in which teachers can overcome these problems.

## Some reasons for ineffective project work

There seem to be two basic reasons for the ineffectiveness of much project work. The first is surely that pupils simply have not mastered the skills necessary to pursue effective project work. The very sophisticated nature of these skills should not be under-estimated. "We award the highest academic accolade to a student who can see a question, focus it into an enquiry, trace sources, find relevant information in those sources, collate the information, reorganise that information in a way that meets the question posed, and write up the reorganised material as a report. To those who achieve that pinnacle of scholarship we award a Ph.D. This same process is the one we have adopted as the main teaching method for the less academic and less well-motivated school pupil..... Yet we often give no specific help." (Marland, 1977) Marland's comments about secondary school use of project work surely apply even more forcibly to the primary school.

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A second likely reason for the ineffectiveness of project work is that the activity itself does not have a clearly defined purpose on the part of the teacher or the pupil. Teachers may do project work for reasons more concerned with class management than skill development, and the use of project work as a means of advancing skills may not be exploited. Certainly, if one were to divide the primary school day up into "skills and frills" sections, as it often is by teachers and others, then it is highly likely that project work would come in the "frills" section.

Pupils may approach the task with very little precise notion of what they wish to achieve. How often is their only guidance a vague wish to "find out" about something, be it dinosaurs, railways or whatever? Rarely will they define precisely what it is they wish to find out about dinosaurs or railways etc.

Deficiencies in this area have been summed up by Maxwell in his review of junior school reading in Scottish schools. "Though the majority of teachers reported grading reading requirements according to pupils' abilities, the general practice did not include close supervision of pupils' reading, and it appeared that frequently the interested and able pupils read widely on a topic while the poorest readers did little other than copy short statements or cut out pictures. Some teachers gave ad hoc help to pupils in the use of reference books, but there appeared little systematic guidance given to pupils on the reading and study techniques required to make the most effective use of their time and efforts." (Maxwell, 1977)

The general picture , then, is of project work being rather a vague area, with little attempt being made to capitalise on its potential as a reading development technique.

Some possibilities for project work

The reader may be forgiven for thinking at this stage that, given the weaknesses in much project work, the solution would be to abandon it altogether. However, that would surely be a great pity, because clearly project work has ideally a great deal to offer as a means of developing reading, and other things. It s greatest asset lies perhaps in the motivation it can engender amongst children. If children are allowed and encouraged to work in areas which interest them, this ought to be a useful means of demonstrating to them the usefulness of developing their reading skills. There is some evidence that children perform at a higher level in their reading when they are really interested in what they are reading about, (Belloni and Jongsma, 1978), and project work would seem an ideal area in which this could happen.

It ought also to be useful because it provides a context which is meaningful to children in which a variety of reading skills can be learnt. With regard to such skills as those involved in finding information in books and libraries, it has to be asked where else in the curriculum apart from in some kind of investigatory work, can these skills be acquired and practised? It would certainly not seem sensible to teach these skills in a context which did not allow children to immediately put them to use, nor would it seem sensible to teach them through sets of exercises independent of any meaningful content area. It is very likely this kind of teaching which is most likely to lead to situations such as those found in the Nottingham reading study (Lunzer and Gardner, 1979) where secondary school children could explain how to use a contents, or an index perfectly well, but when observed in their work, did not actually use these things much at all.

Project work at the very least can provide a context in which children can see the point of learning skills such as using an index, because these skills can make their work easier. Such a situation would

also seem a very sensible place to teach these skills.

Improving project work

If it is agreed that project work has a great deal to offer in terms of developing reading, but recognised that these opportunities tend not to be exploited to the full, it is next necessary to examine ways in which project work can be designed to make full use of its potential.

There seem to be two major criteria which are crucial in carrying this out. Project work needs surely to become purposeful rather than vague, and systematic rather than haphazard. To make it purposeful one of the first steps is, perhaps, to define carefully what children are expected to get out of this work. From a teacher's point of view one of the main things they should gain is a development in specific skills connected with finding and using information. What children gain in terms of content is surely of secondary importance. After all teachers are not generally too concerned with whether a child learns exactly what the average length of a brontosaurus was, or exactly how wide railway lines are apart, but they need to be concerned that the child has the skills necessary to find out that information should it be required. The argument is thus that the major purpose behind project work from a teacher's point of view should be skill development rather than knowledge acquisition. The nature of these skills will be discussed below, but at this point it is necessary to recognise that seeing the process in this light may create a gap between a teacher's purpose and a child's purpose for engaging in project methods. From the child's point of view, what he really wants to get out of a project is precisely the content which, for teachers, has just been relegated to a secondary position. It is the content of a project which gets children interested, quite naturally, not the fact that they may develop their reading skills. There is thus a

clash of interests between teacher and pupils. The important thing seems to be that teachers are aware of this conflict and take some steps to resolve it, which involves some kind of negotiation between teacher and pupils. Teachers need not be afraid of explaining to pupils their reasons for wanting them to carry out a certain piece of investigatory work. The work should be planned carefully, however, to ensure that the pupils are getting something out of it as well.

The second criteria put forward earlier was that project work should be systematic rather than haphazard. There seem to be two major ways of looking at this. One is to be systematic from the point of view of the skills it is aimed to develop through this kind of work, which involves a close definition of the skills necessary to satisfactorily complete a project, and then to structure the work to include all these skills. The second is to look at the process used for introducing and developing projects in the classroom and ensuring that this follows a well-defined plan. These two points of view seem important enough to discuss in much greater depth.

## Defining project skills

The first task then is to define the skills which children will need to complete a project effectively. There have been a number of analyses of this nature put forward. One analysis which has proved useful is to look at the issue as a process of dealing with information, and to define the skills involved in this process as information skills (Winkworth, 1977). This analysis produces six distinct stages:

(i) Define subject and purpose.

(ii) Locate information.

(iii) Select information

(iv) Organise information.

(v) Evaluate information.

(vi) Communicate results.

(i) The first stage involves a clear definition of the subject of the enquiry and the purpose for it. The need here is to encourage children to be precise about what they want to find out in their work. A vague purpose such as "I want to find out about dinosaurs" is not precise enough to be useful, and has two logical consequences. Firstly children have no way of judging the relevance of any information they do find. Presumably any information about dinosaurs is equally relevant.

Secondly there is no indication as to when the process of finding information should stop. Children could go on for ever finding out information about dinosaurs and be no nearer satisfying this vague purpose. They clearly need some assistance from teachers to become much more precise in defining their areas of enquiry. In this case a more precise purpose might be, "I want to find out the relative sizes of the most common dinosaurs so I can draw scale pictures of them on a wall chart". This defines the area and clearly specifies what they are going to do with the information once they have found it.

(ii) The second stage is the stage of actually finding the information in whatever sources are appropriate. This naturally includes the skills of using a library, such as dealing with catalogues, the Dewey system and swiftly locating the books needed on the shelf. It also includes the skills of using books, such as using the contents and the index to track down the topics required. The use of specific reference tools such as encyclopaedias and atlases would also come in here. Children will clearly need to be taught all these things, and, as the Bullock report points out (D.E.S. 1975) there ought to be little difficulty in teaching these things if, and it is a big if, they are taught in a practical manner so that children can see that they do actually help them. The Nottingham finding (Lunzer and Gardner, 1979) is again relevant, that children who could explain how to use an index, did not generally of their own accord actually

use one very often. They clearly did not see it as very useful to them.

One way around this problem should be to teach these skills in a practical way, in a context in which the children themselves can see the usefulness of them. Special library lessons, with exercises or whatever, would not seem the best way of doing this.

(iii) At the next stage of the process, having located the information they require, the children reach what is probably the most difficult part - that is, lifting the information off the page in some meaningful fashion. The evidence suggests (Maxwell, 1977; D.E.S. 1975, 1978) that what happens at this stage is very often simply copying. Some possible reasons for this have already been mentioned. One may be that children do not have sufficient command of the skills of extracting information from a text. In other words their comprehension is at fault.

Another reason may be again, that they have very little precise notion of what they want to get from a particular text. One way of improving this situation is to encourage them to formulate specific questions to which they wish to find answers. These questions need not simply be factual, they can also be interpretative, for example, they might want to know why a particular event took place. The point is that they are unlikely to find answers to these questions neatly encapsulated in a few words, and so they are forced to be selective in what they read. This is where the skills of skimming a text to gain a general impression, and scanning to glean specific points are very useful, and it is surely here that they would most effectively be taught.

If children have specific questions to answer, then their reading is given a clear purpose, and purposeful reading is presumably the aim of all reading teaching.

(iv) The fourth stage of the process concerns what they do with the information once they have found it. Skills such as note-taking come in at this stage, and one way of approaching this is to use the questions

originally formulated as a structure for notes taken, so that children are noting down things they need to know, rather than every conceivably useful point. Again, this should reduce direct copying to a minimum. Also, at this stage, the compiling of a bibliography can be very useful. Even very young children can get into the habit of jotting down the sources of their information as they go along. This not only enables them easily to recheck particular information if they need to, but it also has the effect of encouraging them to consult a wider range of sources of information. How often do children expect to find all the information they need from just one book? Searching through a variety of sources will give them a wider perspective on their study area, and may also give them contradictory evidence. This will force them to progress to the fifth stage of the information process.

(v) The children then have to evaluate the information they have, and they should be able to use a variety of criteria to judge the truth, relevance and worthwhileness of the information they find. This might seem rather beyond primary school chidren, but Zinct (1976) has shown conclusively the need for all children to become aware of possible bias in the books they read. In a project this could perhaps begin by examining texts such as the different accounts of the events leading up to the Norman Conquest by Anglo-Saxon, and Norman contemporary writers. A simple clash of information will be found if books published ten years ago dealing with modern technology (computers etc.) are compared with those published since 1980.

Children need to know what to do in these cases if they are to get at the truth, and they also need to be shown that print is not necessarily infallible. Another thing they need to do in evaluating information is to ask themselves, "How does this information fit with what I already know?". It does seem fairly common for children to produce project work consisting

entirely of reiterations of knowledge they already have, rather than advancements of that knowledge. This, of course, satisfies neither the teacher's nor the child's aims.

(vi) In the final stage of the process the children need to decide on some way of presenting their results. How they do this depends on three things:- their initial purpose, their potential audience, and the nature of the information they have.

They may have intended to present the information as a factual account, or they may have been investigating a particular area with a view to using it as a background for a piece of more imaginative writing. This latter technique can be very useful, especially in historical projects. After all, to write a sensible story about, say, a Viking voyage, involves considerable background knowledge, and this has to be obtained from somewhere.

With regard to the audience for children's project work, it is becoming widely agreed that it is important for chidlren to learn to take into account the potential audience when they are producing written work. This seems in project work to be specifically a choice between writing for an audience who already know something about the subject, or for an audience completely ignorant about it.

Finally, the information itself may lend itself to various forms of presentation, ranging from fact sheets, to some kind of argument for or against various issues. There may also be possibilities for some kind of diagrammatic representation of certain information.

## An approach to teaching

Having established the skills aimed at in project work, a possible systematic way of approaching them in the classroom will now be discussed. This is based unashamedly on a system which will be familiar to students

of Open University reading courses. There may, obviously, be other equally valid ways of approaching this.

The system divides a piece of project work into four basic stages. At first, teachers will have to go through these stages quite carefully with the children, but eventually it is hoped that the children will become independent enough to use the system, or one like it, by themselves. The four stages are:-

Goals - Determining goals or aims.

Plans - Making plans to achieve these goals.

Implementation - Carrying out the plans.

Development - Evaluating success, and using this evaluation to review goals and plans for next time.

This system will now be applied to project work in the classroom.

a) Goals

The children decide what they want to achieve in their work. They work out a purpose, and decide on what they are going to produce, what form it will take, and who will be the intended audience. Naturally, at least to begin with, the children will not be able to do this all for themselves, and this goal-setting will take place in collaboration with the teacher. Both children and teacher will suggest ideas, and together they will work out and negotiate a set of goals.

b) Plans

At the planning stage again there will be negotiation between teacher and children and they will together work out how they are going to achieve their goals. What activities will they need to be involved in? What resources will they need? Where will they get them from? What will they do with them when they find them? What organisational factors need to be taken into account, such as space for working, time, the numbers of children involved at any one time, and how they can make sure nothing important is missed out?

These kind of decisions are normally made by the teacher alone, but it is surely possible that involving the children in making them might be an extremely effective way of teaching them self-determination and discipline. They might also come up with some ideas the teacher had not thought of.

c) Implementation

It seems particularly important that at the implementation phase the children are not simply left to get on with it. This can, in fact, be the most productive teaching time, because the children will be involved in very real problems and their skills will be being rigorously tested. It ought to be possible for the teacher at this stage to spot skill weaknesses, and introduce activities designed to remedy them - activities which the children can see the point of. For example, if a teacher notices that a child or group of children are tending to look for information in books by simply leafing through them, hoping to find the information by accident, he can, at this stage, point out to them the use of the contents and index pages, and run through some quick games using these: for instance, "who can be the first to tell me which chapter is about dinosaur eggs?" and so on. These activities in themselves are no different from the kind of activities often found in books of exercises but here the context is crucially different. The children are not being asked to do the exercises as a matter of course, when they cannot really see the point. They are not in this vacuum-like context. They are being engaged in activities which have a direct relevance to work they are already involved in, and which they can see are designed to help them do this work more effectively.

d) Development

The final stage of this process is sometimes referred to as the Evaluation stage. However the title Development is useful because it

highlights the fact that something has to be done with evaluations: something to improve the process next time around.

Fairly naturally, when a project is completed, and indeed, while it is still in progress, the teacher will be giving hints as to how it might be improved and making evaluations of it. It is necessary to consider, however, to what extent teachers can develop within their children the ability to evaluate their own progress and achievement in a project.

Children can be encouraged to look back at how they found particular pieces of information and to ask themselves whether this was done in the most efficient way. They can also be asked to test out their finished product by investigating whether it in fact does the job it was intended to. It was suggested earlier that one of the goals to be decided for any project was the intended readership of the final product;that is, its audience. Children can, after a project is completed, pass on their finished product to its intended audience, which may be classmates, or children younger or older than themselves, or even adults in or out of school, and can then evaluate the audience's reaction to it.

For example, one very valuable potential audience for project work might be younger children in the same school. Fourth year juniors can produce project booklets for first or second year juniors. A good test of the suitability of the material they choose, and especially its intelligibility, is whether these younger children can read and understand it, and find it enjoyable. Naturally, the best way of finding this out is to ask them.

The need for a school policy

So far project work has been considered in terms of what an individual teacher can do with his or her class of children. However, as with every part of the curriculum, there is a wider perspective to be taken

into account, and that is the fact that there is a limit on what an individual teacher can achieve if he or she is not working in harmony with the rest of the school. It clearly needs to be a part of the school's work on develolping its curriculum to consider the place of project work within this curriculum, and to plan ways in which it can be utilised to maximum advantage. There is really, then, yet a third way of being systematic with regard to project work, and that is for a school to work out a definite policy on how it should be approached and which particular skills should be stressed at which levels. If this is done then the work of individual teachers within the school contributes to the general pattern of pupils' development, rather than being wasted because it is not adequately prepared for, or followed up by other teachers.

## Conclusion

This article has tried to suggest that the poor image project work seems to have as a teaching method, is not a necessary one, and that there are strategies which teachers and schools can employ to ensure that it becomes purposeful and systematic. There can be little doubt that its potential is very great, as it provides the opportunity for effective teaching of skills of information finding and using, within a context of high pupil interest. This unique combination is of too great a value to be wasted.

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